REMARKS

The Supplementary Response filed on 11 March 2004 is at least partially responsive to the criticisms with regard to the Response filed 8 December 2003. As to the added provisos, support for the first proviso is found in Table 1 which sets forth LAP, a previously known peptide as noted in the specification on page 2, lines 24-25; the word "comprise" permits the additional alanine at the N-terminus.

The second proviso is also supported in Table 1 which shows that the relevant sequences (other than those already excluded) are isolated from native sources. (It appears that the rat sequence was inadvertently omitted from this list, and that can be corrected in the next response.)

Further support is found in the list set forth in claim 11.

Support for the specific embodiments of A^5, A^7, A^8, A^{10}, A^{11}, A^{13}, A^{15}, A^{16} and A^{18} are also found in Table 1.

Support for the inclusion of Q in addition to the acidic amino acids in positions A^4, A^{12} and A^{17} is found in compound 701 in Table 2. Support for A^7 as I and A^8 as C is found in compounds 701 and 761 of Table 2. Support for A^{10} as Q and A^{11} as I is also found in compounds 701 and 761 of Table 2. Support for A^{13} as Y is found at least in compounds 702, 701 and 761 of Table 2 and support for A^{15} as F, A^{16} as G and A^{18} as F is found in at least compounds 702, 701, 761 and 762 in Table 2.

It is believed that all of the substantive amendments have therefore been traced to their source.

With respect to the criticism of the claims filed 14 October 2004, applicants do not understand the criticism. Claims 20-24 are identified as original and withdrawn from consideration. It is not clear to applicants what further designation is required.

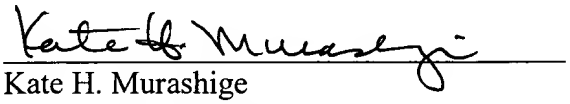
CONCLUSION

Taking into account the Supplementary Amendment that was filed 11 March 2004 and the above explanation, it is believed that the basis for amendment to the claims as presented in the 11 March 2004 submission is adequately explained. Applicants believe the criticism of claims 20-24, submitted 14 October 2004, is in error.

Should any informalities remain, a telephone call to the undersigned is respectfully requested.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket No. 220002054822.

Respectfully submitted,

Dated: January 24, 2005 By: 

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Docket No.: 220002054822	Atty: Kate H. Murashige
Serial No.: 09/836,073	Filing Date: April 16, 2001
Title:METHODS TO INHIBIT VIRAL REPLICATION	
Date of Deposit: March 11, 2004 via First Class Mail	

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MAR 15 2004
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Papers enclosed herewith:

1. Transmittal Form (1 page)
2. Supplemental Response under 37 C.F. R. § 1.111 (12 pages)

THE STAMP OF THE UNITED STATES PATENT AND TRADEMARK OFFICE HEREON WILL ACKNOWLEDGE RECEIPT VIA FIRST CLASS MAIL OF THE ABOVE DOCUMENTS

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	13

Application Number	09/836,073
Filing Date	April 16, 2001
First Named Inventor	Asim DASGUPTA
Art Unit	1635
Examiner Name	S. McGarry
Attorney Docket Number	220002054822

ENCLOSURES (*Check all that apply*)

- [ ] Fee Transmittal Form
  - [ ] Fee Attached
- [x] Amendment/Reply (12 pages)
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
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- [ ] Drawing(s)
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	MORRISON & FOERSTER LLP Kate H. Murashige - 29,959
Signature	Kate H. Murashige
Date	March 11, 2004

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: MS Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: March 11, 2004 Signature: Marian L. Christopher (Marian L. Christopher)

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Marian Christopher

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Asim DASGUPTA, et al.

Serial No.: 09/836,073

Filing Date: 16 April 2001

For: METHODS TO INHIBIT VIRAL REPLICATION

Examiner: Sean R. McGarry

Group Art Unit: 1635

SUPPLEMENTARY RESPONSE UNDER 37 C.F.R. § 1.111

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This paper is in response to a Notice sent by the Office 11 February 2004, where time for response was set to expire 11 March 2004. According to the Notice, the amended claims in the response filed herein on 2 December 2004 did not have a basis in the original claims. The following amendment is based on what appear to be the claims as originally filed and as amended in a sequence listing submission filed 10 October 2002. Please substitute the following amendment for that submitted 2 December 2003.

CLAIMS AMENDMENT

1. (currently amended): A compound of the formula

~~$A^1{}_n A^2{}_n A^3{}_n A^4 A^5 A^6 A^7 A^8 A^9 A^{10} A^{11} A^{12} A^{13} A^{14} A^{15} A^{16} A^{17} A^{18}$ (1)~~

$A^1{}_n A^2{}_n A^3{}_n A^4\ A\ A^6\ I\ C\ A^9\ Q\ I\ A^{12}\ Y\ A^{14}\ F\ G\ A^{17}\ F$ (1)

and acylated and/or amidated forms thereof,

wherein each n is independently 0 or 1;

A^1, A^2[[,]] and A^3 are each independently any amino acid;

A^4, A^{12}[[,]] and A^{17} are independently ~~acidic amino acids~~ E, D or Q;

[[~~A^{13}~~,]] A^{14}[[~~, A^{15}, and A^{18} are independently~~]] is an aromatic amino [[~~acids~~]] acid;

~~A^5, A^7, A^8, A^{11}, and A^{16} represent any amino acid;~~

A^6[[,]] and A^9[[~~, and A^{10}~~]] represent independently a basic amino acid or a polar neutral amino acid;

wherein each of said amino acids may be in the L form, racemic form, or D form, with the proviso that

the compound of formula (1) does not comprise ALEAKICHQIEYYFGDF when all amino acids are in the L-form, and

must be in isolated form when all amino acids are in the L-form and formula (1) is of the sequence LDLDTKICEQIEYYFGDF, DDADQRIIKQLEYYFGNI, VSKLEASTIRQEYYFGDA or QERAIIRQVEYYFGDF.

2. (original): The compound of claim 1 wherein all amino acids are gene encoded.

3. (currently amended): The compound of claim 1 wherein all linkages between ~~A^i subunits~~ the amino acids are amide linkages.

4. (currently amended): The compound of claim 1 wherein all of [[~~A^i~~]] the amino acids are in the D form.

5. (currently amended): The compound of claim 1 wherein all of [[~~A^i~~]] the amino acids are in the L form.

6. (original): The compound of claim 1 wherein each of A^4, A^{12} and A^{17} is independently aspartic or glutamic.

7. (currently amended): The compound of claim 1 wherein ~~each of A^{13},~~ A^{14} [[~~, A^{15} and A^{18}~~]] is ~~independently~~ phenylalanine or tyrosine.

8. (canceled)

9. (currently amended): The compound of claim 1 wherein each of A^6 [[~~,~~]] and A^9 [[~~and A^{10}~~]] is independently lysine, histidine, arginine, glutamine, or asparagine.

10. (previously presented): The compound of claim 1 which is selected from the group consisting of AALEAQICQQIEYYFGDF (SEQ ID NO:2), AALQAKICHQIQYYFGQF (SEQ ID NO:3), QQQEAKICHQIEYYFGDF (SEQ ID NO:4) and AALEAKICHQIEYQFGDF (SEQ ID NO:12).

11. (currently amended): The compound of claim 1 which is in isolated or purified form and is selected from the group consisting of ~~ALEAKICHQIEYYFGDF (SEQ ID NO:13), AALEAKICHQIEYYFGDF (SEQ ID NO:14),~~ LDLDTKICEQIEYYFGDF (SEQ ID NO:15), ~~AALEAKICHQIEEYYFGDF (SEQ ID NO:16),~~ DDADQRIIKQLEYYFGNI (SEQ ID NO:17), VSKLEASTIRQEYYFGDA (SEQ ID NO:18) and QERAIIRQVEYYFGDF (SEQ ID NO:19).

12. (original): A pharmaceutical, veterinary or agricultural/horticultural composition which comprises the compound of claim 1 along with a suitable excipient.

13-19. (canceled)

20. (original, withdrawn): A method to treat viral infection in a plant or animal subject which method comprises administering to said subject an antivirally effective amount of the compound of claim 1.

21. (original, withdrawn): The method of claim 20 wherein said method further comprises administering at least one additional antiviral agent.

22. (original, withdrawn): The method of claim 21 wherein said administering of the compound and said at least one additional antiviral agent is substantially simultaneous.

23. (original, withdrawn): The method of claim 21 wherein said administering of the compound of claim 1 and said at least one antiviral compound is sequential.

24. (original, withdrawn): The method of claim 21 wherein said additional antiviral compound is I-RNA.

25-35. (canceled)

REMARKS

It appears that the confusion caused by the previously submitted amendment was the result of a discrepancy between our computer-based records for this case and our paper file. Our paper file shows the submitted claims as set forth in Exhibit A attached to this response. As noted from Examiner McGarry's kind clarification, only the original claims, amendments filed with the sequence listing on 10 October 2002 and the response filed 2 December 2003 are of record in the PTO as modifying the claims in any way. The amendment filed 10 October 2002 did not amend claim 1. Thus, applicants believe that claim 1 as it currently stands prior to the submission of 3 December 2003 is as shown on Exhibit A. However, our computer-based records show claim 1 to have the form that was used in the 2 December 2003 amendment. Therefore, the proposed amendment has been revised to assume that the depiction of claim 1 on Exhibit A is correct.

It is not believed that any further changes are needed in the response. Therefore, the remainder of this response is as filed previously on 2 December 2003. Applicants greatly appreciate the consideration shown by the Examiner in explaining the origin of the discrepancy.

The claims have been amended to simplify prosecution. Claims 13-19 and 25-35, directed to non-elected inventions, have been canceled. Claims 20-24 have been retained because applicants are aware that should the pending claims, directed to compounds, be considered allowable, rejoinder will be permitted with regard to claims to a method to use these compounds. Claim 1 has been amended to conform to the results in Table 2 on page 16 of the specification and as suggested by the Office on page 6 of the Office action. It is believed that claim 10 was mistakenly included in this rejection. It is understood that in the particular assay, SEQ. ID. No.: 3 exhibited entry of the cells and thus has the potential for antiviral activity.

Claim 1 now also more clearly excludes the LAP peptide.

Formal Matters

Applicants agree that no priority is intended to be claimed with regard to this application.

An appropriate Information Disclosure Statement was enclosed with the response filed 2 December 2003.

The Rejection Under 35 U.S.C. § 112, Second Paragraph

Claim 2 was objected to because it is asserted that amino acids are encoded by codons, not genes; as codons are parts of genes, the claim is believed correct.

Claims 3-5 have been amended to clarify the antecedent basis in claim 1.

Claim 11 has been amended to delete SEQ. ID. No.: 16. It is believed all rejections under this section are therefore overcome.

Double-Patenting

Claims 1-9, 11 and 12 were rejected as assertedly double-patenting over claims 1-5 of U.S. patent 6,291,637. It is believed that the amendments to the claims dispose of this rejection as the LAP peptide, and anything containing it, is excluded from the claims.

The Rejection Under 37 C.F.R. § 1.75(c)

This rejection is mooted by the amendment to the claims.

The Rejection Under 35 U.S.C. § 102(b)

Claims 1-3, 5-9 and 11 were rejected as anticipated by Das (WO 99/61613). It is believed that the amendment to the claims obviates this rejection as well, as the LAP peptide is now clearly excluded from the claims.

The Rejection Under 35 U.S.C. § 112, First Paragraph

All claims were rejected under this paragraph as overbroad. Claim 1 has been amended substantially in conformance with the acknowledged proper scope. The only exception is the retention of sufficient scope to include SEQ. ID. No.: 3 which applicants do not believe is properly excluded. Although SEQ. ID. No.: 3 did not, in this assay, specifically show antiviral activity, since the compound was shown capable of entering the cells, it clearly has promise for antiviral activity even though in an assay for translation inhibition no activity was shown in this particular assay.

Accordingly, applicants believe this basis for rejection may also be withdrawn.

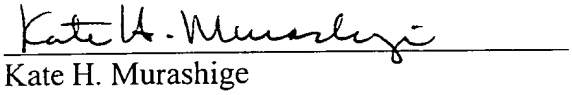
CONCLUSION

The claims have been substantially to expedite prosecution. It is respectfully submitted that claims 1-7 and 9-12 are in position for allowance. As claims 20-24 are directed simply to a method to use the compounds of claims 1-7 and 9-12, these claims, which are dependent on claim 1, may be rejoined. Passage of claims 1-7, 9-12 and 20-24 to issue is respectfully requested.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket No. 220002054822.

Respectfully submitted,

Dated: March 11, 2004

By: 

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Claims

1. A compound of the formula

$A^1{}_n\ A^2{}_n\ A^3{}_n\ A^4\ A^5\ A^6\ A^7\ A^8\ A^9\ A^{10}\ A^{11}\ A^{12}\ A^{13}\ A^{14}\ A^{15}\ A^{16}\ A^{17}\ A^{18}$ (1)

and acylated and/or amidated forms thereof,

wherein each n is independently 0 or 1;

A^1, A^2, and A^3 are each independently any amino acid;

A^4, A^{12}, and A^{17} are independently acidic amino acids;

A^{13}, A^{14}, A^{15}, and A^{18} are independently aromatic amino acids;

A^5, A^7, A^8, A^{11}, and A^{16} represent any amino acid;

A^6, A^9, and A^{10} represent independently a basic amino acid or a polar neutral amino acid;

wherein each of said amino acids may be in the L form, racemic form, or D form.

2. The compound of claim 1 wherein all amino acids are gene encoded.

3. The compound of claim 1 wherein all linkages between A^i subunits are amide linkages.

4. The compound of claim 1 where all of A^i are in the D form.

5. The compound of claim 1 wherein all of A^i are in the L form.

6. The compound of claim 1 wherein each of A^4, A^{12} and A^{17} is independently aspartic or glutamic.

7. The compound of claim 1 wherein each of A^{13}, A^{14}, A^{15} and A^{18} is independently phenylalanine or tyrosine.

8. The compound of claim 1 wherein A^8 is cysteine.

Exhibit A

9. The compound of claim 1 wherein each of A^6, A^9 and A^{10} is independently lysine, histidine, arginine, glutamine, or asparagine.

10. The compound of claim 1 which is selected from the group consisting of AALEAQICQQIEYYFGDF, AALQAKICHQIQYYFGQF, QQQEAKICHQIEYYFGDF and AALEAKICHQIEYQFGDF.

11. The compound of claim 1 which is in isolated or purified form and is selected from the group consisting of ALEAKICHQIEYYFGDF, AALEAKICHQIEYYFGDF, LDLDTKICEQIEYYFGDF, AALEAKICHQIEEYYFGDF, DDADQRIIKQLEYYFGNI, VSKLEASTIRQEYYFGDA and QERAIIRQVEYYFGDF.

12. A pharmaceutical, veterinary or agricultural/horticultural composition which comprises the compound of claim 1 along with a suitable excipient.

13. A nucleic acid molecule comprising a nucleotide sequence encoding the compound of claim 2.

14. A recombinant expression system comprising a nucleotide sequence encoding the compound of claim 2 operably linked to control sequences effective for its expression.

15. A recombinant host cell modified to contain the expression system of claim 14.

16. The recombinant host cell of claim 15 wherein said expression system is integrated into the genome of said host cell.

17. A method to produce the compound of claim 2, which method comprises effecting expression of said compound from the expression system of claim 14.

18. The expression system of claim 14 which is included in a viral vector.

19. The viral vector of claim 18 which is an adenoviral vector or a retroviral vector.

20. A method to treat viral infection in a plant or animal subject which method comprises administering to said subject an antivirally effective amount of the compound of claim 1.

21. The method of claim 20 wherein said method further comprises administering at least one additional antiviral agent.

22. The method of claim 21 wherein said administering of the compound and said at least one additional antiviral agent is substantially simultaneous.

23. The method of claim 21 wherein said administering of the compound of claim 1 and said at least one antiviral compound is sequential.

24. The method of claim 21 wherein said additional antiviral compound is I-RNA.

25. A method to treat viral infection in a plant or animal subject, which method comprises administering to said subject an antivirally effective amount of a nucleotide sequence encoding the compound of claim 2.

26. The method of claim 25 wherein said nucleotide sequence is comprises in an expression system compatible with the cells of said subject.

27. The method of claim 25 wherein said method further comprises administering at least one additional antiviral agent.

28. The method of claim 27 wherein said administering of the compound and said at least one additional antiviral agent is substantially simultaneous.

29. The method of claim 27 wherein said administering of the compound of claim 1 and said at least one antiviral compound is sequential.

30. The method of claim 27 wherein said additional antiviral compound is I-RNA.

31. A method to deliver a compound selectively to the liver, which method comprises administering to a subject containing a liver a desired compound coupled to the compound of claim 1.

32. Antibodies specifically immunoreactive with the compound of claim 1.

33. The antibodies of claim 32 which are immunospecific fragments.

34. The antibodies of claim 33 which are monoclonal antibodies.

35. A method to purify the compound of claim 1, which method comprises contacting a sample containing said compound with antibodies specifically immunoreactive therewith, said antibodies coupled to a solid support.